

## Refine Search

### Search Results -

Terms	Documents
chlorosuccinic acid same acetic anhydride	4

Database:

US Pre-Grant Publication Full-Text Database  
 US Patents Full-Text Database  
 US OCR Full-Text Database  
 EPO Abstracts Database  
 JPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

Search:

L22

Refine Search

Recall Text

Clear

Interrupt

### Search History

DATE: Saturday, July 17, 2004   [Printable Copy](#)   [Create Case](#)

#### Set Name Query

side by side

#### Hit Count Set Name

result set

*DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ*

L22 chlorosuccinic acid same acetic anhydride 4 L22

L21 chlorosuccinic acid and acetic anhydride 23 L21

L20 chlorosuccinic anhydride.ti. 0 L20

*DB=USPT; PLUR=YES; OP=ADJ*

L19 4265247.pn. 1 L19

*DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ*

L18 L11 and sodium nitrite 2 L18

L17 L14 and sodium nitrite 4 L17

L16 L14 and sodium chloride 5 L16

L15 L14 and sodium nitrile 0 L15

L14 L12 and aspartic acid 11 L14

L13 L12 and aspartic acid and sodium nitrile and hydrochloric acid 0 L13

L12 chlorosuccinic acid 140 L12

L11 chlorosuccinic acid.ti. 6 L11

*DB=USPT; PLUR=YES; OP=ADJ*

L10 5473104.pn. or 4143070.pn. or 4265247.pn. 3 L10

*DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ*

L9 5473104.pn. or 4143070.pn. or 4265247.pn. 8 L9

L8 wo-000069808-\$.did. 0 L8

L7 wo-0069808-\$.did. 0 L7

L6 wo-00069808-\$.did. 0 L6

L5 wo-69808-\$.did. 0 L5

L4 wo-0069808-\$.did. 0 L4

L3 L2 and chlorosuccinic acid 0 L3

L2 wo-9905092-\$.did. or wo-0069808-\$.did. 2 L2

*DB=USPT; PLUR=YES; OP=ADJ*

L1 6677476.pn. 1 L1

END OF SEARCH HISTORY

## Hit List

Clear

Generate Collection

Print

Fwd Refs

Bkwd Refs

Generate OACS

**Search Results - Record(s) 1 through 4 of 4 returned.**☐ 1. Document ID: US 20040102645 A1**Using default format because multiple data bases are involved.**

L22: Entry 1 of 4

File: PGPB

May 27, 2004

PGPUB-DOCUMENT-NUMBER: 20040102645

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040102645 A1

TITLE: Process for preparing R-(-)-carnitin from S-(-)-chlorosuccinic acid or from a derivative thereof

PUBLICATION-DATE: May 27, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Melloni, Piero	Bresso		IT	
Cerri, Alberto	Gessate		IT	
Santagostino, Marco	Magenta		IT	

US-CL-CURRENT: 560/171; 562/553

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMIC	Draw D
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☐ 2. Document ID: US 6677476 B1

L22: Entry 2 of 4

File: USPT

Jan 13, 2004

US-PAT-NO: 6677476

DOCUMENT-IDENTIFIER: US 6677476 B1

TITLE: Process for preparing R-(-) -carnitine from S-(-)-chlorosuccinic acid or from a derivative thereof

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMIC	Draw D
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☐ 3. Document ID: US 3804920 A

L22: Entry 3 of 4

File: USOC

Apr 16, 1974

US-PAT-NO: 3804920

DOCUMENT-IDENTIFIER: US 3804920 A

TITLE: RESIN COMPOSITIONS

DATE-ISSUED: April 16, 1974

INVENTOR-NAME: DAMON J; BOHATIUK Z ; CUNNINGHAM A ; HOLTON H ; MATHAI J

US-CL-CURRENT: [525/443](#), [524/597](#), [525/444](#), [525/518](#), [525/519](#), [528/254](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. D
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☐ 4. Document ID: US 2698347 A

L22: Entry 4 of 4

File: USOC

Dec 28, 1954

US-PAT-NO: 2698347

DOCUMENT-IDENTIFIER: US 2698347 A

TITLE: Manufacture of halogen compounds

DATE-ISSUED: December 28, 1954

INVENTOR-NAME: GIRAITIS ALBERT P

US-CL-CURRENT: [570/261](#); [562/596](#), [562/603](#), [562/887](#), [564/496](#), [568/779](#), [568/841](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. D
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Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs	Generate OACS
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Terms	Documents
chlorosuccinic acid same acetic anhydride	4

Display Format:  [Previous Page](#)[Next Page](#)[Go to Doc#](#)

## Hit List

Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs
Generate OACS				

Search Results - Record(s) 1 through 2 of 2 returned.

☐ 1. Document ID: US 20040102645 A1

Using default format because multiple data bases are involved.

L18: Entry 1 of 2

File: PGPB

May 27, 2004

PGPUB-DOCUMENT-NUMBER: 20040102645

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040102645 A1

TITLE: Process for preparing R-(-)-carnitin from S-(-)-chlorosuccinic acid or from a derivative thereof

PUBLICATION-DATE: May 27, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Melloni, Piero	Bresso		IT	
Cerri, Alberto	Gessate		IT	
Santagostino, Marco	Magenta		IT	

US-CL-CURRENT: 560/171; 562/553

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. D
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☐ 2. Document ID: US 6677476 B1

L18: Entry 2 of 2

File: USPT

Jan 13, 2004

US-PAT-NO: 6677476

DOCUMENT-IDENTIFIER: US 6677476 B1

TITLE: Process for preparing R-(-) -carnitine from S-(-)-chlorosuccinic acid or from a derivative thereof

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. D
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Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs	Generate OACS
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Terms	Documents
L11 and sodium nitrite	2

(FILE 'HOME' ENTERED AT 17:22:11 ON 17 JUL 2004)

FILE 'CAPLUS' ENTERED AT 17:22:44 ON 17 JUL 2004  
1 S 4198-33-8/REG# AND ACETIC ANHYDRIDE

FILE 'REGISTRY' ENTERED AT 17:23:13 ON 17 JUL 2004  
1 S 4198-33-8/RN

FILE 'CAPLUS' ENTERED AT 17:23:14 ON 17 JUL 2004

19 S L1

0 S L2 AND ACETIC ANHYDRIDE

FILE 'REGISTRY' ENTERED AT 17:23:27 ON 17 JUL 2004

0 S ACETIC ANHYDRID/CNE

0 S ACETIC ANHYDRID/CN

1 S ACETIC ANHYDRIDE/CN

FILE 'CAPLUS' ENTERED AT 17:24:28 ON 17 JUL 2004

S 4198-33-8/REG# AND 108-24-7/REG#

FILE 'REGISTRY' ENTERED AT 17:25:03 ON 17 JUL 2004

1 S 108-24-7/RN

FILE 'CAPLUS' ENTERED AT 17:25:04 ON 17 JUL 2004

15775 S L7

FILE 'REGISTRY' ENTERED AT 17:25:04 ON 17 JUL 2004

1 S 4198-33-8/RN

FILE 'CAPLUS' ENTERED AT 17:25:04 ON 17 JUL 2004

19 S L9

0 S L10 AND L8

FILE 'REGISTRY' ENTERED AT 17:26:16 ON 17 JUL 2004

1 S CHLOROSUCCINIC ANHYDRIDE/CN

FILE 'CAPLUS' ENTERED AT 17:27:11 ON 17 JUL 2004

3 S 1192-71-8/PREP

0 S 1192-71-8/PROC

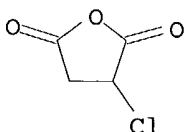
0 S 1192-71-8/PUR

FILE 'STNGUIDE' ENTERED AT 17:29:40 ON 17 JUL 2004

=> s chlorosuccinic anhydride/cn  
L12 1 CHLOROSUCCINIC ANHYDRIDE/CN

=> d .

L12 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 1192-71-8 REGISTRY  
CN 2,5-Furandione, 3-chlorodihydro- (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN Succinic anhydride, chloro- (7CI, 8CI)  
OTHER NAMES:  
CN  $\alpha$ -Chlorosuccinic anhydride  
CN **Chlorosuccinic anhydride**  
FS 3D CONCORD  
DR 7414-69-9  
MF C4 H3 Cl O3  
LC STN Files: BEILSTEIN\*, CA, CAOLD, CAPLUS, CASREACT, TOXCENTER, USPATFULL  
(\*File contains numerically searchable property data)  
DT.CA Caplus document type: Conference; Journal; Patent  
RL.P Roles from patents: RACT (Reactant or reagent)  
RLD.P Roles for non-specific derivatives from patents: USES (Uses)  
RL.NP Roles from non-patents: PREP (Preparation); PRP (Properties); RACT  
(Reactant or reagent); NORL (No role in record)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

12 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
12 REFERENCES IN FILE CAPLUS (1907 TO DATE)  
3 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> file caplus

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	7.04	32.29

FILE 'CAPLUS' ENTERED AT 17:27:11 ON 17 JUL 2004  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2004 AMERICAN CHEMICAL SOCIETY (ACS)

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FILE COVERS 1907 - 17 Jul 2004 VOL 141 ISS 4  
FILE LAST UPDATED: 16 Jul 2004 (20040716/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

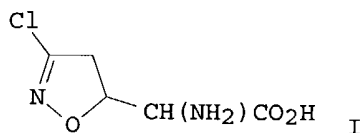
=> s 1192-71-8/prep  
12 1192-71-8  
3172356 PREP/RL  
L13 3 1192-71-8/PREP  
(1192-71-8 (L) PREP/RL)

=> s 1192-71-8/proc  
12 1192-71-8  
3522417 PROC/RL  
L14 0 1192-71-8/PROC  
(1192-71-8 (L) PROC/RL)

=> s 1192-71-8/pur  
12 1192-71-8  
196302 PUR/RL  
L15 0 1192-71-8/PUR  
(1192-71-8 (L) PUR/RL)

=> d l13 1-3 ibib abs hitstr

L13 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 1986:590736 CAPLUS  
DOCUMENT NUMBER: 105:190736  
TITLE: Total synthesis of antitumor agent AT-125,  
( $\alpha$ S,5S)- $\alpha$ -amino-3-chloro-4,5-dihydro-5-  
isoxazoleacetic acid  
AUTHOR(S): Baldwin, Jack E.; Cha, Jin K.; Kruse, Lawrence I.  
CORPORATE SOURCE: Dyson Perrins Lab., Oxford, OX1 3QY, UK  
SOURCE: Tetrahedron (1985), 41(22), 5241-60  
CODEN: TETRAB; ISSN: 0040-4020  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
OTHER SOURCE(S): CASREACT 105:190736  
GI

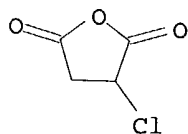


AB A short and efficient total synthesis of racemic AT-125 (erythro-I) and racemic threo-I proceeds via an intramol. Michael cyclization of HONRCOCH<sub>2</sub>CH:C(CO<sub>2</sub>R<sub>1</sub>)NHCO<sub>2</sub>CH<sub>2</sub>Ph (R = 4-MeOC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>, R<sub>1</sub> = CH<sub>2</sub>Ph; R = R<sub>2</sub> = H). Separation of diastereomers and deprotection to erythro-I followed by enzymic resolution of the N-chloroacetamide with hog-kidney acylase provides ( $\alpha$ S,5S)-I.

IT 1192-71-8P  
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP** (**Preparation**); RACT (Reactant or reagent) (preparation and esterification of)

RN 1192-71-8 CAPLUS

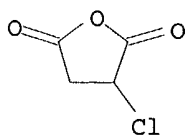
CN 2,5-Furandione, 3-chlorodihydro- (9CI) (CA INDEX NAME)



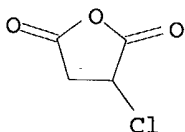
L13 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 1983:557799 CAPLUS



DOCUMENT NUMBER: 99:157799  
 TITLE: Preparation of monomethyl fumarate  
 AUTHOR(S): Dymicky, Michael  
 CORPORATE SOURCE: East. Reg. Res. Cent., Agric. Res. Serv.,  
 Philadelphia, PA, 19118, USA  
 SOURCE: Organic Preparations and Procedures International  
 (1983), 15(4), 233-8  
 CODEN: OPPIAK; ISSN: 0030-4948  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 99:157799  
 AB Monomethyl maleate (I), which was prepared, was catalytically isomerized to  
 monomethyl fumarate (II); HCl, AlCl<sub>3</sub>, and acyl chlorides were used as  
 catalysts. Thus, fumaric acid reacted with ClCOCOCl to give maleic  
 anhydride and chlorosuccinic anhydride, and the maleic anhydride was  
 treated with MeOH to yield I. Mixts. of I and a catalyst were heated to  
 80-5° to give .apprx.82-5% II.  
 IT **1192-71-8P**  
 RL: SPN (Synthetic preparation); **PREP (Preparation)**  
 (preparation of)  
 RN 1192-71-8 CAPLUS  
 CN 2,5-Furandione, 3-chlorodihydro- (9CI) (CA INDEX NAME)



L13 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1972:462087 CAPLUS  
 DOCUMENT NUMBER: 77:62087  
 TITLE: Reaction of phosphorus(III) acid chlorides with  
 conjugated heteroatomic systems  
 AUTHOR(S): Pudovik, A. N.; Khairullin, V. K.; Shagidullin, R. P.;  
 Sobchuk, T. I.; Eliseenkov, V. N.; Vasyanina, M. A.  
 CORPORATE SOURCE: Inst. Org. Fiz. Khim. im. Arbuzova, Kazan, USSR  
 SOURCE: Khim. Primen. Fosfororg. Soedin., Tr. Vses. Konf., 3rd  
 (1972), Meeting Date 1965, 220-30. Editor(s):  
 Kabachnik, M. I. "Nauka": Moscow, USSR.  
 CODEN: 25HKAU  
 DOCUMENT TYPE: Conference  
 LANGUAGE: Russian  
 AB Heating R<sub>1</sub>PCl<sub>2</sub> (R = Et, p-MeC<sub>6</sub>H<sub>4</sub>) with R<sub>1</sub>CH:CHCO<sub>2</sub>H (R<sub>1</sub> = H, Me) gave the  
 corresponding RP(O) ClCHRCH<sub>2</sub>COCl in 37.0-80.5% yield; CH<sub>2</sub>:CMeCO<sub>2</sub>H (I),  
 HC.tplbond.CCO<sub>2</sub>H, and MeO<sub>2</sub>CCH<sub>2</sub>CO<sub>2</sub>H reacted analogously, and I also gave  
 the corresponding cyclic anhydride. Similarly, R<sub>1</sub>PClOR<sub>2</sub> [II, R = Ph,  
 p-MeC<sub>6</sub>H<sub>4</sub>; R<sub>2</sub> = 1-trichloromethyl-1-cyclopentyl, CMe<sub>2</sub>CCl<sub>3</sub>, CH(CH<sub>2</sub>Cl)<sub>2</sub>] and  
 CH<sub>2</sub>:CR<sub>1</sub>CO<sub>2</sub>H (R<sub>1</sub> = H, Me) yielded the corresponding R<sub>2</sub>OP(O)RCH<sub>2</sub>CHR<sub>1</sub>COCl,  
 and II (R<sub>2</sub> = CH<sub>2</sub>CH<sub>2</sub>Cl, Et) afforded the cyclic anhydrides. These products  
 underwent reactions characteristic of their functional groups.  
 IT **1192-71-8P**  
 RL: SPN (Synthetic preparation); **PREP (Preparation)**  
 (preparation of)  
 RN 1192-71-8 CAPLUS  
 CN 2,5-Furandione, 3-chlorodihydro- (9CI) (CA INDEX NAME)



> s acetic anhydride/cn  
L6 1 ACETIC ANHYDRIDE/CN

=> d

L6 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2004 ACS on STN

RN 108-24-7 REGISTRY

CN Acetic acid, anhydride (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN **Acetic anhydride (8CI)**

OTHER NAMES:

CN Acetic oxide

CN Acetyl acetate

CN Acetyl anhydride

CN Acetyl ether

CN Acetyl oxide

CN Ethanoic anhydride

FS 3D CONCORD

MF C4 H6 O3

CI COM

LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN\*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHM, CSNB, DETHERM\*, DIPPR\*, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN\*, HODOC\*, HSDB\*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK\*, MSDS-OHS, NIOSHTIC, PDLCOM\*, PIRA, PROMT, PS, RTECS\*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL, VTB

(\*File contains numerically searchable property data)

Other Sources: DSL\*\*, EINECS\*\*, TSCA\*\*

(\*\*Enter CHEMLIST File for up-to-date regulatory information)

DT.CA Caplus document type: Book; Conference; Dissertation; Journal; Patent; Report

RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

Ac-O-Ac

=> s 4198-33-8 and 108-24-7

**REGISTRY INITIATED**

Substance data SEARCH and crossover from CAS REGISTRY in progress...

Use DISPLAY HITSTR (or FHITSTR) to directly view retrieved structures.

L8            15775 L7

**REGISTRY INITIATED**

Substance data SEARCH and crossover from CAS REGISTRY in progress...

Use DISPLAY HITSTR (or FHITSTR) to directly view retrieved structures.

L10           19 L9

L11           0 L10 AND L8

=>

(FILE 'HOME' ENTERED AT 15:50:46 ON 17 JUL 2004)

L1 FILE 'CAPLUS' ENTERED AT 15:50:57 ON 17 JUL 2004  
STRUCTURE UPLOADED  
S L1

L2 FILE 'REGISTRY' ENTERED AT 15:51:21 ON 17 JUL 2004  
1 S L1

L3 FILE 'CAPLUS' ENTERED AT 15:51:22 ON 17 JUL 2004  
0 S L2  
S L1

L4 FILE 'REGISTRY' ENTERED AT 15:51:29 ON 17 JUL 2004  
66 S L1 FULL

L5 FILE 'CAPLUS' ENTERED AT 15:51:30 ON 17 JUL 2004  
80 S L4 FULL

L6 13 S L5 AND ASPARTIC ACID

L7 0 S L6 AND SODIUM NITRILE

L8 0 S L6 AND SODIUM NITRITE

L9 0 S L6 AND SODIUM CHLORIDE

L10 6 S 4198-33-8/PREP

L11 1 S 4198-33-8/PROC

L12 0 S 4198-33-8/PUR

L13 7 S L10 OR L11

L14 5 S L13 AND ASPARTIC ACID

L15 0 S L14 AND SODIUM NITRITE

L16 0 S L14 AND SODIUM CHLORIDE

FILE 'STNGUIDE' ENTERED AT 15:57:00 ON 17 JUL 2004

L17 FILE 'REGISTRY' ENTERED AT 15:59:00 ON 17 JUL 2004  
1 S SODIUM NITRITE/CN

L18 1 S SODIUM CHLORIDE/CN

FILE 'CAPLUS' ENTERED AT 16:01:44 ON 17 JUL 2004  
S L14 AND 7632-00-0/REG#

L19 FILE 'REGISTRY' ENTERED AT 16:02:20 ON 17 JUL 2004  
1 S 7632-00-0/RN

L20 FILE 'CAPLUS' ENTERED AT 16:02:20 ON 17 JUL 2004  
11721 S L19

L21 0 S L14 AND L20  
S L14 AND 7647-14-5/REG#

L22 FILE 'REGISTRY' ENTERED AT 16:02:50 ON 17 JUL 2004  
1 S 7647-14-5/RN

L23 FILE 'CAPLUS' ENTERED AT 16:02:50 ON 17 JUL 2004  
119942 S L22

L24 0 S L14 AND L23

=>

=> s sodium nitrite/cn  
L17 1 SODIUM NITRITE/CN

=> d

L17 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 7632-00-0 REGISTRY  
CN Nitrous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)  
OTHER NAMES:  
CN Anti-Rust  
CN E 250  
CN Erinitrit  
CN Filmerine  
CN M 138C  
CN Nitrous acid sodium salt (1:1)  
CN **Sodium nitrite**  
CN Sodium nitrite (NaNO<sub>2</sub>)  
CN Synfat 1004  
DR 56227-20-4, 82497-43-6, 82998-40-1, 32863-15-3  
MF H N O<sub>2</sub> . Na  
CI COM  
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS,  
BIOTECHNO, CA, CABA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS,  
CHEMINFORMRX, CHEMLIST, CIN, CSCHM, CSNB, DDFU, DETHERM\*, DIOGENES,  
DIPPR\*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2,  
GMELIN\*, HSDB\*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK\*, MSDS-OHS,  
NAPRALERT, NIOSHTIC, PDLCOM\*, PIRA, PROMT, RTECS\*, TOXCENTER, TULSA,  
ULIDAT, USAN, USPAT2, USPATFULL, VETU, VTB  
(\*File contains numerically searchable property data)  
Other Sources: DSL\*\*, EINECS\*\*, TSCA\*\*  
(\*\*Enter CHEMLIST File for up-to-date regulatory information)  
DT.CA Caplus document type: Book; Conference; Dissertation; Journal; Patent;  
Preprint; Report  
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study);  
FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU  
(Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT  
(Reactant or reagent); USES (Uses); NORL (No role in record)  
RLD.P Roles for non-specific derivatives from patents: ANST (Analytical  
study); BIOL (Biological study); PREP (Preparation); PRP (Properties);  
RACT (Reactant or reagent); USES (Uses)  
RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological  
study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU  
(Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT  
(Reactant or reagent); USES (Uses); NORL (No role in record)  
RLD.NP Roles for non-specific derivatives from non-patents: BIOL (Biological  
study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP  
(Preparation); PRP (Properties); RACT (Reactant or reagent); USES (Uses)  
CRN (7782-77-6)

O=N-OH

● Na

11710 REFERENCES IN FILE CA (1907 TO DATE)  
59 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
11716 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> s sodium chloride/cn  
L18 1 SODIUM CHLORIDE/CN

=> d

L18 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2004 ACS on STN

RN 7647-14-5 REGISTRY  
 CN Sodium chloride (NaCl) (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN Salt (6CI, 7CI)  
 CN **Sodium chloride (8CI)**  
 OTHER NAMES:  
 CN Adsorbanac  
 CN Ayr  
 CN BCD  
 CN Brinewate Superfine  
 CN Cannors 999  
 CN Common salt  
 CN Dendritic salt  
 CN Iodized salt  
 CN Mafiron  
 CN Natrum mur  
 CN NSC 77364  
 CN Sea salt  
 CN Sodium monochloride  
 CN Solsel  
 CN Special Salt 100/95  
 CN SS Salt  
 CN Table salt  
 CN Titrisol  
 CN Uzushio Biryyu M  
 CN Watesal A  
 DR 8028-77-1, 11062-32-1, 11062-43-4, 418758-90-4  
 MF Cl Na  
 CI COM  
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS,  
 BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN,  
 CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHM, CSNB, DDFU, DETHERM\*,  
 DIOGENES, DIPPR\*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT,  
 ENCOMPPAT2, GMELIN\*, HSDB\*, IFICDB, IFIPAT, IFIUDB, IMSCOSEARCH, IPA,  
 MEDLINE, MRCK\*, MSDS-OHS, NIOSHTIC, PDLCOM\*, PIRA, PROMT, RTECS\*,  
 TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL, VETU, VTB  
 (\*File contains numerically searchable property data)  
 Other Sources: DSL\*\*, EINECS\*\*, TSCA\*\*  
 (\*\*Enter CHEMLIST File for up-to-date regulatory information)  
 DT.CA Caplus document type: Book; Conference; Dissertation; Journal; Patent;  
 Preprint; Report  
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study);  
 FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU  
 (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT  
 (Reactant or reagent); USES (Uses); NORL (No role in record)  
 LD.P Roles for non-specific derivatives from patents: BIOL (Biological  
 study); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC  
 (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)  
 L.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological  
 study); CMBI (Combinatorial study); FORM (Formation, nonpreparative);  
 MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC  
 (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses);  
 NORL (No role in record)  
 LD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical  
 study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC  
 (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process);  
 PRP (Properties); RACT (Reactant or reagent); USES (Uses)

1-Na

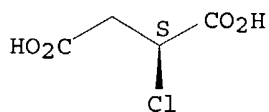
119747 REFERENCES IN FILE CA (1907 TO DATE)  
 372 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 119847 REFERENCES IN FILE CAPLUS (1907 TO DATE)  
 75 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L6 ANSWER 1 OF 13 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 2001:455119 CAPLUS  
 DOCUMENT NUMBER: 135:211197  
 TITLE: Synthesis of N4-(2-acetamido-2-deoxy-β-D-glucopyranosyl)-L-asparagine analogs. L-2-chloro-, L-2-bromo-, and D,L-2-methylsuccinamic acid analogs  
 AUTHOR(S): Xia, Yuan-Qing; Risley, John M.  
 CORPORATE SOURCE: Department of Chemistry, The University of North Carolina at Charlotte, Charlotte, NC, 28223, USA  
 SOURCE: Journal of Carbohydrate Chemistry (2001), 20(1), 45-55  
 CODEN: JCACDM; ISSN: 0732-8303  
 PUBLISHER: Marcel Dekker, Inc.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 135:211197

AB L-Chlorosuccinic anhydride, L-bromosuccinic anhydride, and D,L-methylsuccinic anhydride react with 2-acetamido-2-deoxy-β-D-glucopyranosylamine to give varying mixts. of N4-(β-GlcNAc)-2-substituted- and N4-(β-GlcNAc)-3-substituted-succinamic acid isomers. The two regioisomers are separated by anion exchange chromatog. The N4-(β-GlcNAc)-2-substituted-succinamic acid isomers are characterized as analogs of N4-(2-acetamido-2-deoxy-β-D-glucopyranosyl)-L-asparagine.

IT 4198-33-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (synthesis of N4-(2-acetamido-2-deoxy-β-D-glucopyranosyl)-L-asparagine analogs)  
 RN 4198-33-8 CAPLUS  
 CN Butanedioic acid, chloro-, (2S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> s 4198-33-8/prep  
 19 4198-33-8  
 3172356 PREP/RL  
 L10 6 4198-33-8/PREP  
 (4198-33-8 (L) PREP/RL)

=> s 4198-33-8/proc  
 19 4198-33-8  
 3522417 PROC/RL  
 L11 1 4198-33-8/PROC  
 (4198-33-8 (L) PROC/RL)

=> s 4198-33-8/pur  
 19 4198-33-8  
 196302 PUR/RL  
 L12 0 4198-33-8/PUR  
 (4198-33-8 (L) PUR/RL)

=> s l10 or l11  
 L13 7 L10 OR L11

=> s l13 and aspartic acid  
 62140 ASPARTIC  
 3842716 ACID  
 53509 ASPARTIC ACID

(ASPARTIC(W)ACID)

L14 5 L13 AND ASPARTIC ACID

=> s l14 and sodium nitrite

936629 SODIUM

51849 NITRITE

10966 SODIUM NITRITE

(SODIUM(W)NITRITE)

L15 0 L14 AND SODIUM NITRITE

=> s l14 and sodium chloride

936629 SODIUM

994492 CHLORIDE

112261 SODIUM CHLORIDE

(SODIUM(W)CHLORIDE)

L16 0 L14 AND SODIUM CHLORIDE

=> d l14 1-5 ibib abs hitstr

L14 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2001:455119 CAPLUS

DOCUMENT NUMBER: 135:211197

TITLE: Synthesis of N4-(2-acetamido-2-deoxy- $\beta$ -D-glucopyranosyl)-L-asparagine analogs. L-2-chloro-, L-2-bromo-, and D,L-2-methylsuccinamic acid analogs

AUTHOR(S): Xia, Yuan-Qing; Risley, John M.

CORPORATE SOURCE: Department of Chemistry, The University of North Carolina at Charlotte, Charlotte, NC, 28223, USA

SOURCE: Journal of Carbohydrate Chemistry (2001), 20(1), 45-55  
CODEN: JCACDM; ISSN: 0732-8303

PUBLISHER: Marcel Dekker, Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 135:211197

AB L-Chlorosuccinic anhydride, L-bromosuccinic anhydride, and D,L-methylsuccinic anhydride react with 2-acetamido-2-deoxy- $\beta$ -D-glucopyranosylamine to give varying mixts. of N4-( $\beta$ -GlcNAc)-2-substituted- and N4-( $\beta$ -GlcNAc)-3-substituted-succinamic acid isomers. The two regioisomers are separated by anion exchange chromatog. The N4-( $\beta$ -GlcNAc)-2-substituted-succinamic acid isomers are characterized as analogs of N4-(2-acetamido-2-deoxy- $\beta$ -D-glucopyranosyl)-L-asparagine.

IT 4198-33-8P

RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**

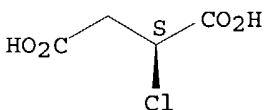
(**Preparation**); RACT (Reactant or reagent)

(synthesis of N4-(2-acetamido-2-deoxy- $\beta$ -D-glucopyranosyl)-L-asparagine analogs)

RN 4198-33-8 CAPLUS

CN Butanedioic acid, chloro-, (2S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2000:824210 CAPLUS

DOCUMENT NUMBER: 133:350513

TITLE: Process for preparing R-(-)-carnitine from S-(-)-chlorosuccinic acid or derivative

INVENTOR(S): Melloni, Piero; Cerri, Alberto; Santagostino, Marco

PATENT ASSIGNEE(S): Sigma-Tau Industrie Farmaceutiche Riunite S.p.A., Italy



SOURCE: PCT Int. Appl., 42 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000069808	A1	20001123	WO 2000-IT187	20000512
W:	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
IT 1306142	B1	20010530	IT 1999-RM310	19990518
IT 1306737	B1	20011002	IT 1999-RM670	19991029
EP 1187805	A1	20020320	EP 2000-927737	20000512
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO			
JP 2002544252	T2	20021224	JP 2000-618226	20000512
US 6677476	B1	20040113	US 2001-959717	20011106
US 2004102645	A1	20040527	US 2003-716453	20031120

PRIORITY APPLN. INFO.:

IT 1999-RM310	A	19990518
IT 1999-RM670	A	19991029
IT 2000-RM61	A	20000210
WO 2000-IT187	W	20000512
US 2001-959717	A3	20011106

OTHER SOURCE(S):

CASREACT 133:350513; MARPAT 133:350513

AB L-Carnitine inner salt was prepared by reduction of (S)-X1COCH2CH(Y)COX2 [X1, X2 = OH, C1-C4 alkoxy, phenoxy, halo or X1X2 = O; Y = halo, mesyloxy, or tosyloxy]. Thus, a 1 M solution of borane in THF was added over 2 h to a suspension of (S)-2-chlorosuccinic acid in THF maintained at -15° and the mixture kept at this temperature for 20 h to afford 50% L-carnitine, following workup.

IT 4198-33-8P, s-Chlorosuccinic acid

RL: RCT (Reactant); SPN (Synthetic preparation); PREP

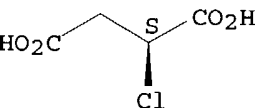
(Preparation); RACT (Reactant or reagent)

(preparation of R-(-)-carnitine from S-(-)-chlorosuccinic acid)

RN 4198-33-8 CAPLUS

CN Butanedioic acid, chloro-, (2S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT:

5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1994:203216 CAPLUS

DOCUMENT NUMBER: 120:203216

TITLE: Collection of enantiomer separation factors obtained by capillary gas chromatography on chiral stationary phases

AUTHOR(S): Anon.

CORPORATE SOURCE: Germany

SOURCE: Journal of High Resolution Chromatography (1993), 16(6), 338-52

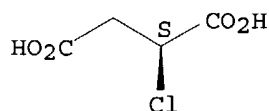
CODEN: JHRCE7; ISSN: 0935-6304

DOCUMENT TYPE:

Journal

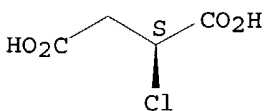
LANGUAGE: English  
 AB The separation factors obtained by capillary gas chromatog. on heptakis(2,6-di-O-methyl-3-O-pentyl)- $\beta$ -cyclodextrin chiral stationary phases are given for many enantiomers.  
 IT **4198-33-8**, (-)-Chlorosuccinic acid  
 RL: PEP (Physical, engineering or chemical process); **PROC** (Process)  
 (separation of, from enantiomer by capillary GC on cyclodextrin derivative chiral stationary phases)  
 RN 4198-33-8 CAPLUS  
 CN Butanedioic acid, chloro-, (2S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L14 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1992:550813 CAPLUS  
 DOCUMENT NUMBER: 117:150813  
 TITLE: An efficient synthesis of enantiomerically pure (R)-(2-benzyloxyethyl)oxirane from (S)-**aspartic acid**  
 AUTHOR(S): Frick, Jeffrey A.; Klassen, John B.; Bathe, Andreas; Abramson, Jill M.; Rapoport, Henry  
 CORPORATE SOURCE: Dep. Chem., Univ. California, Berkeley, CA, 94720, USA  
 SOURCE: Synthesis (1992), (7), 621-3  
 CODEN: SYNTBF; ISSN: 0039-7881  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 117:150813  
 AB A 3-step synthesis of the title compound (I) from (S)-**aspartic acid** (II) is described. Thus, II reacted with NaNO<sub>2</sub>/KBr to give (S)-(-)-bromosuccinic acid which was reduced to (S)-2-bromo-1,4-butanediol (III). III was treated with NaH/THF and PhCH<sub>2</sub>Br/tetrabutylammonium iodide to give I in 78% yield. The overall yield of this process is 65% and the enantiomeric purity (ep) of the product is greater than 99%.  
 IT **4198-33-8P**  
 RL: RCT (Reactant); SPN (Synthetic preparation); **PREP** (Preparation); RACT (Reactant or reagent)  
 (preparation and reduction of)  
 RN 4198-33-8 CAPLUS  
 CN Butanedioic acid, chloro-, (2S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L14 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1987:633196 CAPLUS  
 DOCUMENT NUMBER: 107:233196  
 TITLE: Application of deuterium NMR spectroscopy to study the incorporation of enantiomeric [2-2H]-labeled putrescines into the pyrrolizidine alkaloid retrorsine  
 AUTHOR(S): Kunec, Ellen K.; Robins, David J.  
 CORPORATE SOURCE: Dep. Chem., Univ. Glasgow, Glasgow, G12 8QQ, UK  
 SOURCE: Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (1987), (5), 1089-93  
 CODEN: JCPRB4; ISSN: 0300-922X

DOCUMENT TYPE: Journal  
LANGUAGE: English

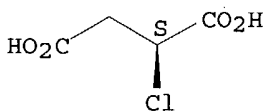
AB A sample of (2R)-[2-2H]putrescine-2HCl was prepared from (2S)-**aspartic acid**, and (2S)-[2-2H]putrescine-2HCl was synthesized from (2R)-**aspartic acid**. Feeding expts. carried out with these precursors on *Senecio isatideus* plants gave retrorsine containing 2H, and the distribution of 2H from each experiment in retrorsine was determined by 2H NMR spectroscopy. All of the 2H was confined to the base component of the alkaloid, retronecine. Retrorsine, derived biosynthetically from (2R)-[2-2H]putrescine-2HCl was labeled with 2H at C-2 and C-6 $\alpha$ , while retrorsine, produced from (2S)-[2-2H]putrescine-2HCl contained 2H labels at C-6 $\beta$  and C-7 $\alpha$ . These labeling patterns demonstrate that hydroxylation at C-7 of retronecine proceeds with retention of configuration. In addition, the formation of the 1,2-double bond of retronecine involves removal of the pro-S hydrogen and retention of the pro-R hydrogen at the C atom which becomes C-2 of retronecine.

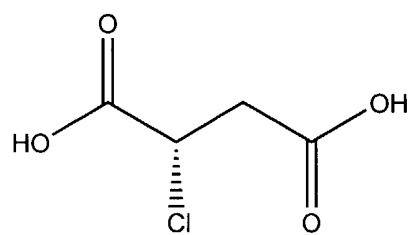
IT **4198-33-8P**  
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP** (**Preparation**); RACT (Reactant or reagent) (preparation and methylation of)

RN 4198-33-8 CAPLUS

CN Butanedioic acid, chloro-, (2S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.





s(-)-chlorosuccinic acid

Caution: Stereochemical terms discarded: -